NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

NOAA In Your State

Pennsylvania

"NOAA's science based work touches 300 million Americans daily, protecting lives and livelihoods. NOAA's products and services are the result of the hard work of our dedicated staff and partner organizations located in program and research offices throughout the globe. The following is a summary of NOAA programs based in, and focused on, your state or territory. The entries are listed by statewide, region, and then by congressional districts and cities or towns."

Dr. Kathryn Sullivan
Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator

PA

Statewide

National Marine Fisheries Service (NMFS) and National Ocean Service (NOS) Office of Habitat Conservation - Chesapeake Bay and Great Lakes Bay-Watershed Education and Training Program

The NOAA Bay-Watershed Education and Training (B-WET) Program is an environmental education program that promotes locally relevant, experiential learning in the K-12 environment. The primary delivery of B-WET is through competitive funding that promotes Meaningful Watershed Educational Experiences (MWEEs). B-WET currently serves seven areas of the country: California, Chesapeake Bay, Great Lakes, Gulf of Mexico, Hawai'i, New England, and the Pacific Northwest. The B-WET Program recognizes that knowledge and commitment built from firsthand experience, especially in the context of one's community and culture, is essential for achieving environmental stewardship. Chesapeake Bay and Great Lakes B-WET respond to regional education and environmental priorities through local implementation of competitive grant funds. Please see regional funding opportunities for priorities and eligibility details. http://www.chesapeakebay.noaa.gov/bay-watershed-education-and-training-b-wet/bay-watershed-education-and-training-b-wet

National Marine Fisheries Service (NMFS) - Greater Atlantic Regional Fisheries Office and Northeast Fisheries Science Center

NMFS is responsible for the management, conservation and protection of living marine resources within the United States' Exclusive Economic Zone (water three to 200 mile offshore). Using the tools provided by the *Magnuson-Stevens Act*, NMFS assesses and predicts the status of fish stocks, develops and ensures compliance with fisheries regulations, restores and protects habitat and works to reduce wasteful fishing practices, and promotes sustainable fisheries. Under

the *Marine Mammal Protection Act* and the *Endangered Species Act*, NMFS recovers protected marine species (e.g. whales, turtles).

The Greater Atlantic Regional Fisheries Office (located in Gloucester, MA) includes divisions that promote sustainable fisheries, habitat conservation, and recovery of protected species, and conducts statistical analysis and programs supporting these divisions. Key fish species managed in the Greater Atlantic Region include the northeast "multispecies complex" (cod, haddock, yellowtail flounder etc.), Atlantic sea scallops, herring, lobster, and summer flounder. Key marine endangered species in this region are northern right whales, Kemp's ridley sea turtles, Atlantic salmon and Atlantic and shortnose sturgeon. NMFS is the lead agency coordinating the Large Whale and Sea Turtle Disentanglement Program activities and the Marine Mammal Health and Stranding Response Program activities. The core functions of these programs include coordinating volunteer networks to: respond to entanglements and strandings, investigate mortality events, and conduct biomonitoring, tissue/serum banking, and analytical quality assurance.

The Northeast Science Center (headquartered in Woods Hole, MA) focuses on collection, analysis, and presentation of scientific information about the Northeast Shelf ecosystem, its condition, and its marine life. In addition to its five laboratories, the Center uses four research vessels to support its work. They are: the NOAA ships *Henry B. Bigelow*, and the small research vessels *Gloria Michelle*, *Victor Loosanoff*, and *Nauvoo*. The Greater Atlantic Regional Fisheries Office and the Science Center are responsible for the District of Columbia and the following states: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina; and the inland states of Vermont, Minnesota, Michigan, Wisconsin, Illinois, Indiana, Ohio, and West Virginia.

National Ocean Service (NOS) - Regional Geodetic Advisor
The Geodetic Advisor is a jointly funded National Ocean Service (NOS) employee that resides in the state to provide liaison between NOS and the host state. The Geodetic Advisor guides and assists the state's charting, geodetic and surveying programs through technical expertise. The program is designed to fill a need for more accurate geodetic surveys, and is in response to the desire of states to improve their surveying techniques to meet Federal Geodetic Control subcommittee standards and specifications. The surveys provide the basis for all forms of mapping and engineering projects and monitoring of the dynamic Earth. This program also provides technical assistance in planning and implementing Geographic/Land Information System (GIS/LIS) projects.

National Marine Fisheries Service (NMFS) - Restoration Center
NMFS Restoration Center works with private and public partners in Pennsylvania to restore tidal wetlands, construct fish ladders, remove dams, modify culverts to improve tidal flushing in coastal wetlands, remove invasive species and restore native shellfish populations for the benefit of managed fisheries and protected species. Currently, for example, we are in settlement discussions and scoping potential restoration activities at a number of sites as outcomes to compensate for past habitat impacts at contaminant sites.

National Ocean Service (NOS) - Atlantic Environmental Response Management Application
Assessing important spatial information and designing successful restoration projects rely upon interpreting and mapping geographic information, including the location, duration, and impacts from oil spills, other hazardous materials, or debris released into the environment. Atlantic ERMA® is an online mapping tool that integrates both static and real-time data, such as Environmental Sensitivity Index (ESI) maps, ship locations, weather, and ocean currents, in a centralized, easy-to-use format for environmental responders and decision makers. In the fall of 2012, Atlantic ERMA was employed as the Common Operational Picture for the U.S. Coast Guard's pollution response to Hurricane Sandy in New York and New Jersey waters.

National Weather Service (NWS) - Automated Surface Observing Systems Stations
The Automated Surface Observing Systems (ASOS) program is a joint effort of the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). ASOS serves as the Nation's primary surface weather observing network. ASOS is designed to support weather forecast activities and aviation operations and, at the same time, support the needs of the meteorological, hydrological, and climatological research communities. ASOS works non-stop, updating observations every minute, 24 hours a day, every day of the year observing basic weather elements, such as cloud cover, precipitation, wind, sea level pressure, and conditions, such as rain, snow, freezing rain, thunderstorms, and fog. There are 24 ASOS stations in Pennsylvania.

National Weather Service (NWS) - Cooperative Observer Program Sites
The National Weather Service (NWS) Cooperative Observer Program (COOP) is truly the Nation's weather and climate observing network of, by and for the people. More than 10,000 volunteers take observations on farms, in urban and suburban areas, National Parks, seashores, and mountaintops. The data are representative of where people live, work and play. The COOP was formally created in 1890 under the NWS Organic Act to provide observational meteorological data, usually consisting of daily maximum and minimum temperatures, snowfall, and 24-hour precipitation totals, required to define the climate of the United States and to help measure long-term climate changes, and to provide observational meteorological data in near real-time to support forecast, warning and other public service programs of the NWS. The data are also used by other federal (including the Department of Homeland Security), state and local entities, as well as private companies (such as the energy and insurance industries). In some cases, the data are used to make billions of dollars' worth of decisions. There are 214 COOP sites in Pennsylvania.

National Weather Service (NWS) - NOAA Weather Radio All Hazards Transmitters
NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service (NWS) forecast office. NWR broadcasts official NWS warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Working with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "All Hazards" radio network, making it the single source for comprehensive weather and emergency information. In conjunction with federal, state, and local emergency managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards – including natural, environmental, and public safety. Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the NWS. NWR includes 1,100 transmitters covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. There are 21 NWR transmitters in Pennsylvania.

Office of Oceanic and Atmospheric Research (OAR) - Sea Grant College Program
Pennsylvania Sea Grant promotes the ecological and economic sustainability of Pennsylvania's coastal resources through science-based research, education, and extension programs. Major Geographic Focus Areas include the Lake Erie, Delaware River, and Susquehanna River watersheds. By supporting focused applied research projects, PASG provides stakeholders with accurate scientific information to help them make informed decisions dealing with such topics as: land-use planning, nutrient loading, harmful algal blooms, aquatic invasive species, fish health, climate adaptation, emerging pollutants, smallmouth bass mortality, and coastal community and economic development.

Delaware River and Bay Districts

National Ocean Service (NOS) - Delaware River and Bay PORTS®
A Physical Oceanographic Real-Time System (PORTS®) is operated cooperatively with the local maritime community in Delaware Bay and River at which real-time data are quality-controlled and disseminated to local users for safe and efficient navigation. Real-time data are available for water levels from eleven stations, meteorological data from eleven locations, current data from three locations, conductivity from three locations and air gap from one location.

Delaware Bay and Great Lakes Districts

National Ocean Service (NOS) - Navigation Manager

NOAA's navigation managers work directly with pilots, port authorities, and recreational boating organizations in Pennsylvania. They help identify the navigational challenges facing marine transportation in Pennsylvania and provide NOAA's resources and services that promote safe and efficient navigation. Navigation managers are on call to provide expertise and NOAA navigation response coordination in case of severe coastal weather events or other marine emergencies, as they did in 2012 when Coast Survey deployed an experienced navigation manager to assist Delaware Bay stakeholders in the response to Superstorm Sandy. The Office of Coast Survey has navigation managers in Silver Spring, MD to support mariners and stakeholders in the Delaware Bay and Great Lakes regions.

Great Lakes

National Ocean Service (NOS) - Coastal Storms Program

Coastal Storms Program focused resources on the Great Lakes region in 2012 and will continue providing support through 2017. Great Lakes project work is focused on the following priority areas: 1) improved weather observations, modeling, and risk communication to address hazards affecting beach safety (rip currents) and coastal development: 2) Shoreline assessment and management; and 3) stormwater impacts on aquatic resources. Outreach coordinators are located with Minnesota and Wisconsin Sea Grant and a small grants competition administered by Ohio Sea Grant was held in FY13.

National Ocean Service (NOS) - Coastal Management Program

Through a unique Federal-state partnership, NOAA's Office for Coastal Management (OCM) works with the Pennsylvania Department of Environmental Protection to implement the National Coastal Zone Management Program in Pennsylvania. OCM provides the coastal management program with financial and technical assistance to further the goals of the Coastal Zone Management Act and ensure our coastal waters and lands are used in a balanced way to support jobs, reduce use conflicts, and sustain natural resources.

National Ocean Service (NOS) - Marine Debris Projects and Partnerships

The NOAA Marine Debris Program (MDP) leads national and international efforts to research, prevent, and reduce the impacts of marine debris. The program supports marine debris removal, education and outreach, and research projects in partnership with state and local agencies, tribes, non-governmental organizations, academia, and industry.

National Ocean Service (NOS) - Great Lakes Observing System

U.S. IOOS® is an operational system and a network of regional partners responsible for regional observations, data management, modeling and analysis, education and outreach, and research and development. The overarching purpose of U.S. IOOS is to address regional and national needs for ocean data and information. The Great Lakes Observing System (GLOS) is one of these Regional Associations. GLOS provides public access to critical, real-time and historical data and information about the Great Lakes, St. Lawrence River and interconnecting waterways for use in managing, safeguarding and understanding these immensely valuable freshwater resources. GLOS is intended to gather and integrate chemical, biologic and hydrologic data, and monitor lake conditions and trends over time.

PA-2

Philadelphia

National Ocean Service (NOS) - Regional Resource Coordinator

The Office of Response and Restoration's (OR&R) Regional Resource Coordinator (RRC) based in Philadelphia provides scientific and technical expertise and timely response to oil spills or hazardous materials releases to collect information, samples, and evidence that are time dependent and critical to support natural resource damage assessments throughout the coastal US. Specifically, RRCs work on multi-disciplinary scientific, economic, and legal teams and are responsible for determining and quantifying injuries to NOAA trust natural resources through determination of injuries and pathway, and demonstration of causal mechanisms. RRCs document the severity, geographic extent, and likely duration of the injury. The goal of the RRCs efforts is to determine the appropriate amount and type of restoration required to restore injured NOAA trust resources and compensate the public for their lost use.

PA-1, 3

National Ocean Service (NOS) - National Water Level Observation Network

NOS operates two long-term continuously operating tide stations in the state of Pennsylvania, which provide data and information on tidal datum and relative sea level trends, Great Lakes and interconnecting waterways datum and lake level regulation, and are capable of producing real-time data for storm surge warning. These stations are located at Philadelphia and Erie. The Philadelphia station is associated with a set of tidal benchmarks installed in the ground that is used to reference the height of the water levels and helps connect the water level to land.

PA-3, 5

Office of Oceanic and Atmospheric Research (OAR) - CoastWatch

The NOAA CoastWatch Great Lakes regional node obtains, produces, and delivers environmental data and products for near real-time observation of the Great Lakes to support environmental science, decision making, and supporting research. This is achieved by providing access to near real-time and retrospective satellite observations and in-situ Great Lakes data. The CoastWatch node at GLERL provides clients including Federal, state, and local agencies, academic institutions, commercial/industries and the public, both within and outside of the Great Lakes region, with access to near real-time satellite observations and in-situ data for the Great Lakes. CoastWatch data are used in a variety of ways, including near real-time observation and tracking of algal blooms, plumes, ice cover, wind, water intake temperatures at fish hatcheries, two and three dimensional modeling of Great Lakes physical parameters such as wave height and currents damage assessment modeling, research, and educational and recreational activities. In addition, through a cooperative project with Michigan Sea Grant, Great Lakes CoastWatch satellite-derived surface temperature imagery is contoured and made available via Michigan State Sea Grant's web site.

PA-4, 17

Harrisburg and Easton

Office of Oceanic and Atmospheric Research (OAR) - Science On a Sphere®

Science On a Sphere (SOS) uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain complex environmental processes.

PA-5
State College

National Weather Service (NWS) - River Forecast Center

Co-located with the NWS Weather Forecast Office on the campus of the Pennsylvania State University in State College, the Middle Atlantic River Forecast Center (RFC) performs continuous river basin modeling and provides hydrologic forecast and guidance products for rivers and streams in central and eastern Pennsylvania, all of New Jersey and Delaware, southern New York, western Maryland, and parts of Virginia and West Virginia. These products include forecasts of river stage and flow, probabilistic river forecasts, reservoir inflow forecasts, gridded precipitation estimates and forecasts, spring flood outlooks, and flash flood and headwater guidance. Some of the RFCs in the western and central U.S. also provide water supply forecasts. RFCs work closely with local, state and federal water management agencies, including the U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, and U.S. Geological Survey, to provide water and flood information for critical decisions (aka Impact-based Decision-Support Services or IDSS).

National Weather Service (NWS) - Weather Forecast Office

Co-located with the NWS Middle Atlantic River Forecast Center on the campus of the Pennsylvania State University, this NWS Weather Forecast Office (WFO) in State College, is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of central Pennsylvania. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

Office of Oceanic and Atmospheric Research (OAR) - Atmospheric Integrated Research Monitoring Network

A NOAA Atmospheric Integrated Research Monitoring Network (AIRMoN) site is located at Penn State, PA. The site has been in operation since 1992 collecting data on major ions in precipitation (rain, snow) on a daily basis and from 1976 on an event basis. The major ions collected include: sulfate, nitrate, phosphorus, pH, ammonium, sodium, chloride, and soil cations. AIRMoN is a sub-network of the National Atmospheric Deposition Program.

Office of Oceanic and Atmospheric Research (OAR) - Cooperative Institute for Limnology and Ecosystems Research

Established in 2007, the Cooperative Institute for Limnology and Ecosystems Research (CILER) conducts collaborative research through a ten-member consortium of academic institutions in the Great Lakes region. CILER's primary NOAA research partner is the Great Lakes Environmental Research Laboratory; CILER also collaborates with NOAA's Office of Oceanic and Atmospheric Research, National Ocean Service, National Weather Service, and National Environment Satellite, Data, and Information Service. CILER is administratively housed at the University of Michigan, and is comprised of Grand Valley State University, Michigan State University, Ohio State University, Penn State University, State University of New York-Stony Brook, University of Illinois of Urbana-Champaign, University of Michigan, University of Minnesota, University of Toledo, and University of Wisconsin. CILER conducts research across six scientific themes: (1) Great Lakes forecasting; (2) invasive species; (3) observing systems; (4) protection and restoration of resources; (5) integrated assessment; and (6) education and outreach.

Office of Oceanic and Atmospheric Research (OAR) - Surface Radiation Measurement Network

The Earth System Research Laboratory operates seven stations as part of its surface radiation measurement network (SURFRAD). The station measurements support regional and global weather and climate research with accurate, continuous, long-term measurements of the surface radiation budget over the United States. Solar radiation is the driving energy for geophysical and biological processes that control weather and affect planetary life; understanding the global surface energy budget is therefore key to understanding climate and the environmental consequences to agriculture and other statewide concerns. Because it is impractical to cover the whole earth with monitoring stations, the answer to global coverage lies in reliable satellite-based observations. Accurate and precise ground-based measurements across a range of climate regions are essential to refine and verify the satellite observations. These ground-based measurements also support special research projects on radiation and climate processes in the Pennsylvania region and serve as important verification for weather forecasts.

PA-10

Lewisburg

Office of Oceanic and Atmospheric Research (OAR) - Cooperative Global Air Sampling Network

NOAA's Earth System Research Laboratory (ESRL) operates a Cooperative Global Air Sampling Network to measure the distribution and trends of carbon dioxide (CO2) and methane (CH4), the two gases most responsible for human-caused climate change, as well as other greenhouse gases and volatile organic compounds. Samples are collected weekly at fixed locations and on several commercial ships. The air samples are delivered to the ESRL laboratory, located in Boulder, CO. The observed geographical patterns and small but persistent spatial gradients are used to better understand the processes, both natural and human induced, that underlie the trends. Tese measurements help determine the magnitude of carbon sources and sinks in North America Site operated in collaboration with Earth Networks.

PA-16

Avondale

National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR) - U.S. Climate Reference Network

The U.S. Climate Reference Network (USCRN) is an operationally viable research network of 134 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS).

PA-18

Pittsburgh

National Weather Service (NWS) - Weather Forecast Office

Located in Moon Township, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of western Pennsylvania, east central Ohio, northern West Virginia, and western Maryland. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards. Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

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